

What is claimed is:

1. A method for managing a spare area of a write-once optical disc possibly having a temporary defect management area within one or more spare areas, the method comprising the steps

5 of:

allocating one or more spare areas including the temporary defect management area at an initial status of the optical disc;
and

during use of the optical disc, expanding the spare area
10 allocated including the temporary defect management area to set a new spare area.

2. The method of claim 1, wherein when the spare area is expanded, the temporary defect management area is allocated
15 together with the spare area.

3. The method of claim 2, wherein the temporary defect management area maintains a predetermined ratio with respect to the expanded spare area.

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4. The method of claim 3, wherein the temporary defect management area maintains 1/4 size of the expanded spare area.

5. The method of claim 1, wherein when the spare area is

expanded, only an area except for the temporary defect management area is allocated.

6. The method of claim 2 or 5, wherein there exists a
5 maximum size to which the spare area is expandable.

7. The method of claim 2 or 5, wherein the spare area is freely expandable over a size of an expandable minimum unit.

10 8. The method of claim 2 or 5, wherein the spare area is expanded by an identical size whenever being expanded.

9. The method of claim 1, wherein the expandable spare area corresponds only to a spare area positioned at an end of a
15 user data area.

10. The method of claim 9, wherein in case the optical disc has a single record layer, the expandable spare area is an outer spare area (OSA) positioned at an outer periphery of the optical
20 disc.

11. The method of claim 9, wherein in case the optical disc has two record layers, the expandable spare area is an inner spare area (ISA1) positioned at an end of a user data area.

12. A method for managing a spare area of a write-once optical disc possibly having a temporary defect management area within one or more spare areas, the method comprising the steps
5 of:

allocating only the spare area not including the temporary defect management area at an initial status of the optical disc;
and

during use of the optical disc, additively allocating the
10 spare area including the temporary defect management area.

13. The method of claim 12, wherein at the initial status of the optical disc, as the spare area not including the temporary defect management area, only an inner spare area (ISA)
15 positioned on an inner periphery area is allocated.

14. The method of claim 12, wherein at the initial status of the optical disc, as the spare area not including the temporary defect management area, both of an inner spare area
20 (ISA) positioned on an inner periphery area and an outer spare area (OSA) are allocated.

15. The method of claim 12, wherein the spare area including the additively allocated temporary defect management

area is sequentially allocated from an end of a user data area to a maximum-allocatable area.

16. The method of claim 15, wherein the additively
5 allocated spare area is freely allocatable at a size over a minimum unit.

17. The method of claim 15, wherein the additively
allocated spare area is allocated by an identical size whenever
10 being allocated.

18. A method for managing a spare area of a write-once
optical disc possibly having a temporary defect management area
within one or more spare areas, the method comprising the steps
15 of:

allocating one or more spare areas including the temporary
defect management area at an initial status of the optical disc;
and

during use of the optical disc, reducing an area except for
20 the temporary defect management area in the spare area allocated
including the temporary defect management area to set a new spare
area.

19. A method for managing a spare area of a write-once optical disc possibly having a temporary defect management area within one or more spare areas, the method comprising the steps of:

5 allocating an expanded area discriminated from the spare area and a user data area; and

during use of the optical disc, expanding the spare area and the user data area into the expanded area as necessary.

10 20. The method of claim 19, wherein the spare area comprises a temporary defect management area.

21. The method of claim 20, wherein the spare area expanded into the expanded area is a temporary defect management area.

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22. The method of claim 20, wherein the spare area expanded into the expanded area is an area except for the temporary defect management area.

20 23. A write-once optical disc provided with a lead-in area and a data area, at least one or more spare areas including a temporary defect management area being allocated in the data area, a new spare area being possibly set by expanding or reducing the

spare area allocated including the temporary defect management area.

24. A write-once optical disc provided with a lead-in area
5 and a data area, the data area being provided therein with a spare area and a user data area, and further provided with a separate expanded area such that the spare area or the user data area is expandable as necessary.

10 25. An optical record reproducing apparatus of a write-once optical disc comprising:

a control part for determining whether or not a spare area is additively allocated; and

15 a recording/reproducing part for expanding a spare area including a temporary defect management area when it is necessary to additively allot the spare area depending on the determination, and setting a new spare area.

26. The optical record reproducing apparatus of claim 25,
20 wherein when the spare area is expanded, the allocating is performed including the temporary defect management area.

27. The optical record reproducing apparatus of claim 25, wherein when the spare area is expanded, the expanding allocating

is performed only with respect to an area except for the temporary defect management area.

28. An optical record reproducing apparatus of a write-once
5 optical disc comprising:

a control part for determining whether or not an allocated spare area is reduced; and

a recording/reproducing part for reducing a spare area including a temporary defect management area when it is necessary
10 to reduce the spare area depending on the determination, and setting a new spare area.

29. The optical record reproducing apparatus of claim 28, wherein when the spare area is reduced, the reducing is performed
15 only with respect to an area except for the temporary defect management area.